CLAIMS:

1. An organometallic compound vaporizing and feeding system comprising

(1) a reagent container containing an organometallic compound, a carrier gas source, an in-line monitor, a carrier gas feed passageway connecting said carrier gas source to said reagent container and having a mass flow controller disposed therein for controlling the flow rate of the carrier gas,

(2) an organometallic compound gas passageway connecting said reagent container to said in-line monitor for transporting the organometallic compound gas vaporized and carried by the carrier gas,

(3) an ICP emission spectrometer, a sample gas passageway connecting said in-line monitor to a sample inlet of said ICP spectrometer,

(4) a gas cylinder filled with a standard gas for calibration, a standard gas passageway connecting said gas cylinder to said sample gas passageway and having a gas mass flow controller disposed therein for controlling the flow rate of the standard gas, and

(5) a diluent gas passageway connected to said standard gas passageway downstream of the standard gas mass flow controller for passing a diluent gas for adjusting the concentration of the calibration standard gas and having a gas mass flow controller disposed therein for controlling the flow rate of the diluent gas.

2. The vaporizing and feeding system of claim 1, comprising a plurality of calibration standard gas cylinders, a corresponding plurality of standard gas passageways each having a gas mass flow controller disposed therein for controlling the flow rate of the corresponding standard gas, and a corresponding plurality of diluent gas passageways connected to the corresponding standard gas passageways and having diluent gas mass flow controllers disposed therein.

3. The vaporizing and feeding system of claim 1, further comprising a bypass passageway connected to said organometallic compound gas passageway for passing the carrier gas for diluting the concentration of organometallic compound and having a mass flow controller disposed therein for controlling the flow rate of the diluent carrier gas.